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WASHINGTON, D.C. OFFICES

MEASUREMENT OF UNIT EFFECTIVENESS IN MARINE CORPS INFANTRY BATTALIONS

Technical Memorandum

Sponsored by:
Defense Advanced Research Projects Agency

ARPA Order Number	3379
Program Code Number	TL10
Program Element Number	62711E
Contractor	CACI, Inc.-Federal
Effective Date of Contract	March 23, 1977
Contract Expiration Date -	August 31, 1977
Amount of Contract	\$99,629
Contract Number	MDA903-77-C-0199
Principal Investigator	Dr. Richard E. Hayes (703) 841-7846
Short Title of Work	Effectiveness of Infantry Battalions
Date of Report	June 30, 1977
Period Covered by Report	June 1-30, 1977

The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the Defense Advanced Research Projects Agency or the U.S. Government.

MEMORANDUM

TO: LTC Richard J. Johnson, USMC
Readiness Branch
Headquarters, USMC

FROM: Richard E. Hayes, Ph.D. *REH/CH*
Policy Sciences Division
CACI, Inc.-Federal

DATE: June 30, 1977

This document and its attachments constitute the Technical Memorandum on Task 5 called for by Contract No. MDA907-77-C-0199 (ARPA Order Number 3379).

Task 5 reads as follows:

Using a panel of experienced military officers chosen in consultation with the COTR and his designated representative, the Contractor shall elicit ratings of overall mission accomplishment on the part of units engaged in 90 percent of the selected cases. The remaining 10 percent will be excluded from this coding.

Subtask 5A. Each member of the panel will be asked to review the material on a subset of selected cases and to rate accomplishment both in terms of percentage completion and rank order on achievement.

Subtask 5B. Using a modified Delphi approach, including meetings among panel members, the Contractor shall elicit such consensus among the panel members as is possible given the available time and money.

This memorandum consists of four parts. Attachment 1 is an overview of the procedures designed to elicit rankings and develop consensus. Attachment 2 is the revised questionnaire for evaluating mission

accomplishment. Attachment 3 is a set of schedules for the effective use of individuals and groups who are available for 1/2, 1, and 2 full days. Attachment 4 is the revised questionnaire for Task 7, included here because Tasks 5 and 7 are being carried out as a unit to conserve resources and meet the shortened time schedule of the contract, and because this questionnaire is expected to impact on the judgmental coding of case outcomes.

ATTACHMENT 1

Procedures for Task 5 Data Collection

INTRODUCTION

To take full advantage of the knowledge and effort of the experienced military officers utilized in Task 5, the research team has structured the data elicitation effort so that it can be applied to either individuals or groups and data can be collected in 1/2-day, 1-day, or 2-day increments. This discussion focuses on the typical 1-day, 2-person case. Comparative schedules for 1/2 and 2 days are found in Attachment 3.

All efforts, except 1-person efforts, are designed to elicit 7 different types of information:

1. Initial individual impression of the relative effectiveness of a combat unit.
2. In initial individual impression of the factors causing the relative level of combat effectiveness.
3. Individual, comparative ranking of two or more combat units in different engagements.
4. Individual, informed opinion of the combat effectiveness of the unit.
5. Group consensus as to the relative combat effectiveness of individual units in specific engagements.
6. Group consensus as to the factors causing a unit to be more or less combat effective.
7. List of factors or forces to be discussed by the group in reaching a consensus.

The basic steps in developing this information are

- Introduction to the project,
- Reading of prepared materials on selected combat engagements,

- Individual coding of unit effectiveness in mission accomplishment,
- Individual coding of the perceived reasons for levels of combat effectiveness,
- Comparative ranking of the cases reviewed by each individual,
- Group discussion of unit combat effectiveness,
- Group rating of unit effectiveness,
- Group rating of factors influencing combat effectiveness, and
- Debriefing of the group by research team members.

DATA COLLECTION PROCEDURES

This discussion deals with the "typical case" of a small group (2 or 3 officers) who are engaged in data coding for 1 day.

Morning Schedule

Project Introduction. Before coming to the project, the officers will have been given a brief oral overview of its nature and purpose. In addition, CACI, Inc.-Federal will provide them with a brief (5-page) discussion of the purpose of the project and the overall research design. Nevertheless, because experienced research officers are not usually professionals in the social science research field, an introductory briefing will be presented to each group. This will be quite informal. Fifteen minutes of overhead projector material will be presented, with questions encouraged. A total of one-half hour is allocated to this effort. Subjects covered will include

- Purpose, scope, and schedule of the project,
- Expected products and their dissemination,

- Progress to date,
- The role of the officer panel,
- The schedule for the day,
- The forms they will be using,
- The importance of thoughtful inference, and
- The encouragement of and opportunity for feedback and criticism.

Reviewing selected engagements and initial, individual effectiveness coding. Each officer will be given two written descriptions of battalion level operations (including appropriate maps) or engagements, along with two copies of the mission accomplishment questionnaire (Attachment 2). Each person in the group will have the same engagements. They will be asked to read these engagements and complete the mission accomplishment questionnaires on each. These questionnaires will then be collected. This is expected to take about 1 hour.

Individual Factor Coding. After a 10-minute coffee break, the panel, which has retained the descriptive material on its two engagements, will then code, individually, those factors that appear to have influenced event effectiveness either positively or negatively (Attachment 3).

Individual Reflective Coding and Comparative Ranking. Having had the opportunity to review the details of each unit's mission and performance, individuals will be asked to recode mission accomplishment and rank the two units on relative mission accomplishment. This information will also be collected.

Group Discussion of Effectiveness and Critical Factors. During a coffee break, the research team will compare the individual members' rankings and selection of critical factors. A group discussion will then be

initiated to develop "consensus" on the correct score for each unit on mission accomplishment and the key factors leading to that score. The same forms will be used, but groups will be forced to select one score for each question. Where necessary, the research team representative will prompt the discussion by reporting (anonymously) group disagreements on the earlier coding sheets. Throughout these discussions the research team will take notes on the factors mentioned and the frequency and intensity of references to them as critical elements in determining unit effectiveness. The group will also be asked to rank the engagements. This meeting will take about 1 hour.

Afternoon Schedule

The afternoon schedule parallels that of the morning. However, because of the absence of a need for project introduction and familiarity with the procedures, the panel will be asked to deal with three cases rather than two. In addition, both individuals and the group will be asked to provide relative rankings of all five cases examined during the day.

Debriefing. Following completion of group discussions, a debriefing of the team will be held to elicit comments or suggestions on the research effort, the materials provided, and substantive suggestions from the panel.

CHOICE OF CASES

To deal with statistical problems arising from the relatively small number of cases considered, each individual or group consulted will be given a different set of cases (mission, era, etc.). However, selected parts of cases with similar missions and very different outcomes will be introduced to produce useful insights. Assignment of specific cases to specific individuals will be essentially random except that officers will be prevented from coding cases of which they have first-hand knowledge.

WORKING CONDITIONS

Officers are asked to work alone in the individual coding cases and to refrain from discussing coding or cases with one another until the group phase has begun.

ATTACHMENT 2

Revised Questionnaire

	No Information	Importance to the Out- come of This Engagement	Unit Performance		
			Unsatisfactory	Satisfactory	Satisfactory
I.1 TRAINING, OVERALL					
a. For This Action					
b. Rehearsals					
I.2 MORALE AT OUTSET					
I.3 GENERAL QUALITY OF INFORMATION					
a. Maps					
b. Aerial Reconnaissance and Photos					
c. Terrain					
d. Quality and Type of Enemy Forces					
e. Ground Reconnaissance					

		No Information	Importance to the Out- come of This Engagement	Unit Performance		
				Unsatisfactory	Satisfactory	
II.	OVERALL PLANNING FOR THE ENGAGEMENT					
II.1	QUALITY OF PLAN		low high		marginal high	
a.	Objectives					
b.	Missions of Subordinate Units					
c.	Information on Overall Operation and Its Goals					
d.	Timing of Actions					
e.	Zones of Responsibility					
f.	Support Available					
	1. Air					
	2. Artillery					
	3. Naval gunfire					
II.2	CONSISTENCY WITH PRINCIPLES OF WAR					
a.	Objective					
b.	Offensive					
c.	Mass					
d.	Economy of Force					
e.	Maneuver		low high		marginal high	

	No Information	Importance to the Out- come of This Engagement	Unit Performance		
			Unsatisfactory	Satisfactory	
f. Unity of Command		low high	low marginal high		
g. Security					
h. Surprise					
i. Simplicity					
II.3 TIMELINESS OF ORDERS					
a. Original Warning Orders					
b. Commanders Concept of the Operation					
c. Operations Planning					
II.4 RESERVE UNITS					
a. Adequacy (numbers)					
b. Locations					
II.5 LOGISTICS SUPPORT					
a. Supply Situation and Procedures For Resupply					
b. Medical Facilities					
c. Communications and Coordination Signals		low high	low marginal high		

	No Information	Importance to the Out- come to This Engagement	Unit Performance			
			Unsatisfactory	Satisfactory	low	high
II.6 SUBORDINATE UNITS (BnCO to Subordinates)						
a. Situation Communicated; Including Objectives and Fit With Other Operations						
b. Knowledge of Subordinate Unit Situation, Strength, Location, Personnel						
c. Plans Developed, Communicated, Reviewed in a Timely Fashion						
d. Coordination of Subordinate Units						
II.7 AWARENESS OF ENEMY CAPABILITIES						
a. Infantry						
b. Armor						
c. Anti-Mechanized						
d. Artillery						
e. Air						
f. Anti-Air						
g. Chemical						
h. Nuclear						
i. Special Capabilities (Night Surveillance and so forth)						

	No Information	Importance to the Out- come of This Engagement	Unit Performance		
			Unsatisfactory	Satisfactory	
c. Security of Maneuver		<input type="checkbox"/> low <input type="checkbox"/> high	<input type="checkbox"/> low <input type="checkbox"/> marginal <input type="checkbox"/> high	<input type="checkbox"/>	
d. Use of Cover and Concealment		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e. Choice of Axis of Movement		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
f. Communication Between Companies		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
g. Communication With Adjacent Units		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
h. Communication With Superior Organi- zations		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
i. Position of Reserve		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
j. Use of Reserve		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
k. Choice of Positions For Line Units (when halted or engaged)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
l. Choice of Positions For Headquarters Units (when halted or engaged)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
m. Reaction to Developments or New Information		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III.2.3 USE OF FIRE					
a. Organic		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1. Fire discipline		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Location of organic crew- served weapons		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. Timeliness of Organic Fire		<input type="checkbox"/> low <input type="checkbox"/> high	<input type="checkbox"/> low <input type="checkbox"/> marginal <input type="checkbox"/> high	<input type="checkbox"/>	

	No Information	Importance to the Outcome of This Engagement	Unit Performance			
			Unsatisfactory	Satisfactory	Satisfactory	Satisfactory
c. Accuracy of Organic Fire		low high	low marginal high			
d. Fire Planning For Organic Weapons						
III.2.4 SUPPORT ARTILLERY						
a. Location of Trained Observers						
b. Communication With Supporting Units						
c. Fire Planning						
d. Use of Fire to Attain Unit Objectives						
e. Ammunition Availability						
f. Use of Appropriate Ammunition Type						
III.2.5 NAVAL GUNFIRE						
a. Location of Trained Observers						
b. Communication With Supporting Units						
c. Fire Planning						
d. Use of Fire to Attain Unit Objectives						
e. Ammunition Availability						
f. Use of Appropriate Ammunition Types		low high	low marginal high			

		No Information	Importance to the Out- come of This Engagement	Unit Performance		
				Unsatisfactory	Satisfactory	
III.2.6	TACTICAL AIR SUPPORT			low	marginal	high
a.	Location of Coordinators					
b.	Communications With Air Support					
c.	Planning For Use					
d.	Timeliness c Requests					
e.	Use of Air Support to Attain Unit Objectives					
f.	Use of Proper Types of Ordnance					
III.2.7	OVERNIGHT POSITIONS					
III.2.7.1	ADEQUACY OF POSITION					
a.	Location					
b.	Reconnaissance					
c.	Linkages Between Units					
d.	Supply Routes Open, Protected					
e.	Consideration of Enemy Capabilities					
III.2.7.2	ADEQUACY OF PROTECTION					
a.	Barriers Employed					
b.	Location of CP			low	marginal	high

	No Information	Importance to the Out- come of This Engagement	Unit Performance					
			Unsatisfactory			Satisfactory		
c. Likely Avenues of Attack Blocked		low high	low	marginal	high			
d. Use of Concealment and Camouflage								
III.2.7.3 SECURITY ON THE MOVE								
a. Use of Proper Formations								
b. Development of Enemy Positions Without Endangering Column		low high	low	marginal	high			

	No Information	Importance to the Out- come of This Engagement	Unit Performance			
			Unsatisfactory	Satisfactory	low	high
III.3.1 LINKAGES TO EXTERNAL UNITS OR COMMANDERS (includes communications kept open and effective)		low high	low marginal high			
a. Superior Commander						
b. Coordinate Commanders (flanks)						
c. Air Support						
d. Artillery Support						
e. Naval Gunfire						
f. Transport Requirements						
g. Supply Requirements						
III.3.2 REACTION TO UNEXPECTED SITUATIONS						
a. Promptness						
b. Decisiveness						
c. Communication to Other Elements						
d. Amount of Risk Accepted		low high	low marginal high			

	No Information	Importance to the Out- come of This Engagement	Unit Performance		
			Unsatisfactory	Satisfactory	Satisfactory
III.4 PERSONNEL	<input type="checkbox"/>	<input type="checkbox"/> low <input type="checkbox"/> high	<input type="checkbox"/> low <input type="checkbox"/> marginal <input type="checkbox"/> high	<input type="checkbox"/>	<input type="checkbox"/>
III.4.1 MORALE DURING COMBAT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
III.4.2 DISCIPLINE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
III.4.3 AGGRESSIVENESS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
III.4.4 INITIATIVE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
III.4.5 RESOURCEFULNESS UNDER PRESSURE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
III.4.6 CASUALTY LEVELS (Impact of Effectiveness)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
III.4.7 MEDICAL AND EVACUATION SUPPORT	<input type="checkbox"/>	<input type="checkbox"/> low <input type="checkbox"/> high	<input type="checkbox"/> low <input type="checkbox"/> marginal <input type="checkbox"/> high	<input type="checkbox"/>	<input type="checkbox"/>

	No Information	Importance to the Out- come of This Engagement	Unit Performance		
			Unsatisfactory	Satisfactory	
III.5 SUPPLY	<input type="checkbox"/>	<input type="checkbox"/> low <input type="checkbox"/> high	<input type="checkbox"/> low <input type="checkbox"/> marginal <input type="checkbox"/> high	<input type="checkbox"/>	
III.5.1 AMMUNITION ADEQUACY, TIMELINESS OF RESUPPLY, AVAILABILITY OF KEY TYPES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
a. Small Arms		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. Organic Weapons		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c. Demolition		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d. Support Artillery		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e. Naval Gunfire		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
f. Air Support Ordnance		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III.5.2 POL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
a. Availability		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. Prompt Response to Resupply Request		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III.5.3 MEDICAL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
a. Availability		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. Prompt Response to Resupply Request		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III.5.4 FOOD AND WATER	<input type="checkbox"/>	<input type="checkbox"/> low <input type="checkbox"/> high	<input type="checkbox"/> low <input type="checkbox"/> marginal <input type="checkbox"/> high	<input type="checkbox"/>	

	No Information	Importance to the Out- come of This Engagement		Unit Performance			
		low	high	low	marginal	high	Unsatisfactory Satisfactory
III. 5.5 BARRIER MATERIALS							
a. Mines							
b. Wire							
III. 5.6 SPECIAL EQUIPMENT							
a. Chemical							
1. Availability on request							
2. Adequacy							
b. Biological							
c. Nuclear							
1. Availability on request							
2. Adequacy							
d. Cold Weather							
1. Adequacy							
2. Availability on request							
e. Other - Availability on Request							

	No Information	Importance to the Out- come of This Engagement	Unit Performance			
			Unsatisfactory	Satisfactory	Satisfactory	Satisfactory
III.5.7 MAINTENANCE -- EVIDENCE OF FAILURE IN ACTION						
a. Individual Weapons						
b. Crew Served						
1. Organic						
2. Artillery						
c. Vehicles						
III.5.8 COMMUNICATIONS						

ATTACHMENT 3

Schedules for Panel Coding

SCHEDULE A

2 or More Individuals, 1 Day

0830 - 0900	Introduction to project (w/coffee)
0900 - 0950	Read two cases, complete Mission Accomplishments Form
0950 - 1000	Coffee break
1000 - 1050	Complete Critical Factors Form, compare cases, rescore mission accomplishment
1050 - 1100	Coffee break
1100 - 1200	Group discussion of accomplishment and critical factors
1200 - 1300	Lunch
1300 - 1400	Read three new cases, complete Mission Accomplishment Form
1400 - 1410	Coffee break
1410 - 1510	Complete Critical Factors Form, compare cases, rescore mission accomplishment
1510 - 1520	Coffee break
1520 - 1620	Group discussion of accomplishment and critical factors; comparative mission accomplishment
1620 - 1700	Debriefing (w/coffee)

SCHEDULE B

2 or More Individuals, 1/2 Day

0830 - 0900	Introduction to project (w/coffee)
0900 - 0950	Read two cases, complete Mission Accomplishment Form
0950 - 1000	Coffee break
1000 - 1050	Complete Critical Factors Form, compare cases, rescore mission accomplishment
1050 - 1100	Coffee break
1100 - 1200	Group discussion of accomplishment and critical factors
1200 - 1230	Debriefing (w/coffee)

SCHEDULE C

2 or More Individuals, 2 Days

Day 1

Same as Schedule A, except that the debriefing in the afternoon is optional.

Day 2

0900 - 0950	Read three new cases, complete Mission Accomplishment Form
0950 - 1000	Coffee break
1000 - 1050	Complete Critical Factors Form, compare cases, rescore mission accomplishment
1050 - 1100	Coffee break
1100 - 1215	Group discussion of accomplishment and critical factors, comparative mission accomplishment
1215 - 1315	Lunch
1315 - 1500	Score mission accomplishment on two new cases only
1500 - 1600	Group discussion on mission accomplishment only, relative ranking of cases
1600 - 1700	Debriefing

SCHEDULE D
1 Individual

A. 1-Day Agenda

0830 - 0900	Introduction to project (w/coffee)
0900 - 1030	Read three cases, complete Mission Accomplishment Form
1030 - 1045	Coffee break
1045 - 1200	Complete Critical Factors Form, reevaluate mission accomplishment
1200 - 1300	Lunch
1300 - 1430	Read three new cases, complete Mission Accomplishment Form, compare with three morning cases
1430 - 1445	Coffee break
1445 - 1615	Complete Critical Factors Forms, reevaluate and compare mission accomplishment
1615 - 1645	Debriefing (w/coffee)

B. 1/2-Day Agenda

Identical to 1-day schedule except debriefing from 1200-1230.

C. 2-Day Agenda

Day 1 is identical to 1-day schedule except debriefing at the end of Day 1 is replaced by discussion of critical factors with a member of the research staff.

Day 2

0900 - 1030	Read three new cases, complete Mission Accomplishment Form
1030 - 1045	Coffee break
1045 - 1215	Complete Critical Factors Forms, reevaluate mission accomplishment
1215 - 1315	Lunch
1315 - 1445	Read, code for mission accomplishment <u>only</u> , three new cases
1445 - 1500	Coffee break
1500 - 1530	Rank order all 12 cases
1530 - 1630	Debriefing

ATTACHMENT 4

Task 7 Revised Questionnaire

ENGAGEMENT NO. _____

Operation (Name, location, year) _____

Phase _____ Dates _____ to _____

Unit (Bn, Regt, Div) _____

PERSONNEL - KEY STAFF AND COMMANDERS

Position	Name (Last, first, MI)	Time with this unit
Bn Cmdr	_____	_____
Bn XO	_____	_____
Bn S-2	_____	_____
Bn S-3	_____	_____
Bn S-4	_____	_____
CO, H&S Co	_____	_____
CO, Co	_____	_____
CO, Co	_____	_____
CO, Co	_____	_____
CO, Co	_____	_____
	_____	_____
	_____	_____
	_____	_____

Comments

(Record any special notations or comments regarding key personnel during this engagement as reflected in battalion records or other sources. Identify all sources quoted.)

ENGAGEMENT NO. _____

Operation (Name, location, year) _____

Phase _____ Dates _____ to _____

Unit (Bn, Regt, Div) _____

PERSONNEL - STRENGTH, SHORTAGES, CASUALTIES

1. Unit strength at Operation or Phase Start:

	<u>USMC</u>	<u>USN</u>	<u>Total</u>
Officers			
Enlisted			
Total			

2. Significant MOS shortages (record any comments or data):

3. Casualties:

	<u>USMC</u>		<u>USN</u>		<u>Total</u>	
	Officers	Enlisted	Officers	Enlisted	Officers	Enlisted
KIA	_____	_____	_____	_____	_____	_____
WIA	_____	_____	_____	_____	_____	_____
MIA	_____	_____	_____	_____	_____	_____
Totals	_____	_____	_____	_____	_____	_____

Percentage of casualties - (check one) High _____ Low _____

4. Explanantion for exceptionally high or low casualties: (check if not normal)

<u>Own Problems</u>	<u>Enemy Influenced</u>
Lack or ineffectiveness of supporting fire _____	Enemy strength _____
Lack or inadequcy of training _____	Enemy position _____
Intelligence lack, organic _____	Enemy firepower _____
Intelligence lack, higher HQ _____	Enemy air _____
Other _____	

Additional Comments

(Record any special notations or comments regarding strength, shortages, casualties or other personnel factors as reflected in battalion records or other sources. Identify all sources quoted.) _____

ENGAGEMENT NO. _____

Operation (Name, location, year) _____

Phase _____ Dates _____ to _____

Unit (Bn, Regt, Div) _____

UNIT EXPERIENCE

1. No. of months in the theater _____

2. No. of months in combat since arrival _____

3. No. of previous operations since arrival _____

Additional Comments

(Record any special notations or comments regarding unit experience, particularly since arriving in the theater, as reflected in battalion records or other sources. Identify all sources quoted.)

ENGAGEMENT NO. _____

Operation (Name, location, year) _____

Phase _____ Dates _____ to _____

Unit (Bn, Regt, Div) _____

FRIENDLY-ENEMY FACTORS (2 Pages)

1. Type Combat (Check all applicable. If more than one, show time order by number. Indicate whether friendly (F) or enemy (E) action.)

OFFENSE

Movement to Contact (MC) _____
Attack (ATK) _____
Night Attack (NATK) _____
Amphibious Assault (AAS) _____
Helicopter Assault (HA) _____
Tank-Infantry (T-I) _____
Mechanized Operation (MEO) _____
Evacuation (EV) _____
Combat Patrolling (CP) _____

DEFENSE

Defensive Operation (DEF) _____
Retrograde (RET) _____
Break Contact (BC) _____
Enemy Air Action (EEA) _____
Enemy Chemical Attack (EC) _____
Enemy BW Attack (EBW) _____
Electronic Countermeasures (EEC) _____
Enemy Nuclear Threat (ENT) _____

2. Force Ratio Enemy (Numerator) (Fill in all. Use UNK if necessary)
 Friendly (Denominator) (Indicate friendly (F); enemy (E))

	<u>Available</u>	<u>Unavailable</u>
General, overall	_____	_____
Artillery support	_____	_____
Air support	_____	_____
Naval gunfire	_____	_____
Missile support	_____	_____

3. Enemy Positions: Hasty _____ Prepared _____ Concrete _____

4. Enemy Command & Control: Good _____ Average _____ Poor _____

5. Surprise by the Enemy (check one or more as appropriate):

None _____ Tactics _____ Strength _____ Locations _____ Weapons _____

Other (specify) _____

6. Surprise by Friendly Troops: (Check one or more as appropriate.)

None _____ Tactics _____ Strength _____ Locations _____ Weapons _____

Other (specify) _____

7. Surprises by Nature: Weather _____ Other - _____

ENGAGEMENT NO. _____

Operation (Name, location, year) _____

Phase _____ Dates _____ to _____

Unit (Bn, Regt, Div) _____

FRIENDLY-ENEMY FACTORS

8. Type(s) of Troops Engaged:

Friendly

Enemy

Seasoned combat veterans

Trained regular troops

Average, mixed experience unit

Irregulars, guerrillas, etc.

Hastily organized unit (ad hoc)

Other (describe) _____

Additional Comments

(Record any other notations or comments involving friendly-enemy factors as reflected in battalion records or other sources. Identify all sources quoted.)

ENGAGEMENT NO. _____

Operation (Name, location, year) _____

Phase _____ Dates _____ to _____

Unit (Bn, Regt, Div) _____

EQUIPMENT TYPES AND AVAILABILITY

1. Weapons, Individual

(INFORMATION TO FILL IN THIS FORM
MAY NOT BE AVAILABLE -- LAYOUT OF
THE FORM AND DATA TO BE RECORDED
BEING DISCUSSED WITH COTR.)

2. Weapons, Organizational

3. Vehicles, transport

4. Vehicles, combat

5. Clothing & Equipage, individual

6. Other

EQUIPMENT VARIABLES

Form #5

ENGAGEMENT NO. _____

Operation (Name, location, year) _____

Phase _____ Dates _____ to _____

Unit (Bn, Regt, Div) _____

EQUIPMENT VARIABLES

1. Equipment Losses: (Indicate no. and type where info is available. Provide all equipment comments from battalion records.)

2. Equipment Availability:

<u>Type</u>	<u>Essentially As Authorized</u>	<u>Reduced (Extent)</u>
Landing craft		
Shore party equipment		
Assault vehicles		
Ground transport		
Weapons		
Clothing and Equipage		
Communications Equipment		
Other _____		

3. Maintenance: Bn maintenance rating _____

Problems - (Indicate type of equipment, kind of problem(s) extent, duration, and solution, if any.)

4. Other Equipment Problem(s): (Type and extent) _____

EQUIPMENT VARIABLES

Form #6

ENGAGEMENT NO. _____

Operation (Name, location, year) _____

Phase _____ Dates _____ to _____

Unit (Bn, Regt, Div) _____

AMMUNITION VARIABLES

- | 1. <u>Ammunition Availability:</u> | <u>Ample</u> | <u>Sufficient</u> | <u>Marginal</u> |
|--------------------------------------|--------------|-------------------|-----------------|
| Small arms (rifle, pistol, grenades) | _____ | _____ | _____ |
| Machine gun | _____ | _____ | _____ |
| Rocket | _____ | _____ | _____ |
| Mortar | _____ | _____ | _____ |
| Recoilless rifle | _____ | _____ | _____ |
| Chemical (CS) | _____ | _____ | _____ |
| Other _____ | _____ | _____ | _____ |
2. Ammunition Problems: (Adequacy, capability, appropriateness) (Indicate comments or notations from battalion records.)
- _____
- _____
- _____
3. Fire effectiveness: (Provide any comments or notations from battalion reports. Indicate if no comment made. Cover friendly and enemy.)
- _____
- _____
- _____

Additional Comments

ENGAGEMENT NO. _____

Operation (Name, location, year) _____

Phase _____ Dates _____ to _____

Unit (Bn, Regt, Div) _____

SUPPLY AND EVACUATION

1. Supply Availability: Ample Sufficient Interrupted Marginal

Rations - type _____

Medical supplies _____

POL _____

Spare parts _____

Other _____

2. Supply Delivery: Daily _____ Periodic _____ Erratic _____

3. Delivery Problems: Lack of transport _____ Inadequate air delivery _____

Weather interruptions _____ Enemy road interdiction _____ Bridge out _____

Delivery equipment problems _____ Lack of supply personnel _____

Other (describe type and extent) _____

4. Medical evacuation: By vehicle _____ By helicopter _____ On foot _____

None _____ Other _____

5. Speed of evacuation: Prompt - In minutes _____ Within 1 hour _____

Delayed - Hours _____ Days _____

Additional Comments

ENGAGEMENT NO. _____

Operation (Name, location, year) _____

Phase _____ Dates _____ to _____

Unit (Bn, Regt, Div) _____

UNIT EXPERIENCE - TRAINING

1. Unit Completed Training:

Full Cycle _____

Accelerated Program _____

Limited, partial _____

2. Level and Type of Training: (Check one or more)

Battalion _____

Regimental _____

Division _____

Maneuvers _____

Landing Operations _____

Amphibious _____

Heliborne _____

3. Had Rehearsal of Operation Been Carried Out? Yes _____ No _____

Additional Comments

(Record any special notations or comments regarding unit training as reflected in battalion records or other sources. Identify all sources quoted.)

ENGAGEMENT NO. _____

Operation (Name, location, year) _____

Phase _____ Dates _____ to _____

Unit (Bn, Regt, Div) _____

OPERATIONS SUPPORT

1. Artillery:

No. of Batteries - direct support _____
No. of Batteries - indirect support _____
No. of Batteries - total support _____

Preparatory fire -
(check one) Heavy Moderate Light Unknown

During engagement Heavy Moderate Light Unknown

Comments on artillery support: Yes _____ No _____
(Record) _____

2. Air Support:

Close air support - Fixed wing _____ Helicopter _____

Bomber aircraft - Planned _____ On call _____

Days (hrs) preparation on battalion area _____

Provided prior to operation _____ During operation _____

Comments on air support: Yes _____ No _____

(Record) _____

3. Naval Gunfire: Type ships on station _____

No. of guns: 5 in _____ 6 in _____ 8 in _____ 16 in _____

No. of rounds fired: _____

Additional Comments

ENGAGEMENT NO. _____

Operation (Name, location, year) _____

Phase _____ Dates _____ to _____

Unit (Bn, Regt, Div) _____

SITUATION CONTROLS (2 Pages)

1. Unit Mission: (Pick one or several from list below, using abbreviation(s).)

Type _____

Offense - a. Movement to Contact (MC) f. Tank-Infantry (T-I)
 b. Attack (ATK) g. Mechanized Operation (MEO)
 c. Night Attack (NATK) h. Evacuation (EV)
 d. Amphibious Assault (AAS) i. Combat Patrolling (CP)
 e. Helicopter Assault (HA)

Defense - a. Defensive Operation (DEF) c. Break Contact (BC)
 b. Retrograde (RET)

2. Level of Effort:

Main Effort _____ Secondary Effort _____

3. Distance(s) Involved (yds or km)(indicate):

To first objective _____
To second objective _____
To final objective _____

4. Opposition:

	<u>Low</u>	<u>Moderate</u>	<u>High</u>
Severity of Infantry Resistance	_____	_____	_____
Severity of Mortar and Arty Fire	_____	_____	_____
Severity of Armor Resistance	_____	_____	_____
Severity of Enemy Air Attacks	_____	_____	_____
Other _____	_____	_____	_____

5. Terrain: (Check one or more - indicate order encountered)

Open _____	Sandy Beach _____	Hilly _____
Tank country _____	Rocky shore _____	Mountainous _____
Jungle _____	Swampy ground _____	Desert _____
Urban _____	Other (specify) _____	_____

6. Time of Engagement - active fighting:

Daytime _____ Nighttime _____ Both _____

ENGAGEMENT NO. _____

Operation (Name, location, year) _____

Phase _____ Dates _____ to _____

Unit (Bn, Regt, Div) _____

SITUATION CONTROLS (Page 2)

7. Weather: (check as appropriate - indicate % if available)

- a. Clear _____
Rain _____
Snow _____
Muddy _____

- b. Temperature - Was it a factor? Yes _____ No _____
What was effect? _____

Additional Comments

ENGAGEMENT NO. _____

Operation (Name, location, year) _____

Phase _____ Dates _____ to _____

Unit (Bn, Regt, Div) _____

OUTCOME MEASURES

1. Mission

_____ OBJ Achieved? (Yes, No)
_____ FEBA MVT _____ On time? (Show hours late or early)

2. Enemy Casualties

_____ No. POW's Taken
_____ Enemy KIA

3. Enemy Breakthrough (if it occurred) (Check one)

Blocked Partly Sealed Off Allowed

4. Coordination With Adjacent Units (Check One)

Maintained Lost

5. Interior Contact

Maintained Lost

6. Residual Capabilities (Summarize from other forms)

A. Personnel (From Form #3)

_____ % KIA
_____ % WIA
_____ % MIA
_____ Final % of Authorized Strength

_____ Explain abnormality

B. Arms - Loss Rate (From Form #6) (Check one)

Subnormal Normal High

C. Vehicle Loss (From Form #6)

_____ Explain abnormality

OUTCOME MEASURES(Summary)

Form #12 (2 pages)

ENGAGEMENT NO. _____

Operation (Name, location, year) _____

Phase _____ Dates _____ to _____

Unit (Bn, Regt, Div) _____

OUTCOME MEASURES (Page 2)

D. POL - Availability (From Form #8) (Check one)

Sub-normal Normal Above Normal

E. Ammo Expenditure (From Form #7)

Explain abnormality

F. Ammo Supply (From Form #7)

Explain abnormality

G. Fire Effectiveness (From Form #7)

Explain if rated

"Fair"

MATERIAL INSPECTION AND RECEIVING REPORT		1. PROC. INSTRUMENT IDEN (CONTRACT) MDA 903-77-C-199		ORDER NO. 3379	6. INVOICE NO.	7. PAGE 1 OF 1	8. ACCEPTANCE POINT DATE
2. SHIPMENT NO. CAC3810002AD	3. DATE SHIPPED 06/30/77	4. B/L TCN n/a		5. DISCOUNT TERMS NET			
9. NAME CONTRACTOR CACI, Inc.-Federal 1815 North Fort Myer Drive Arlington, Virginia 22209		10. ADMINISTERED BY Chief, DCASMA Baltimore 300 East Joppa Road Room 200 Towson, MD 21204		CODE 2D166		S2101A	
11. SHIPPED FROM (If other than 9) CODE HX 1241		12. PAYMENT WILL BE MADE BY Disbursing Office, DCASR Philadelphia 300 East Joppa Road Room 200 Towson, Md. 21204		CODE S3910A			
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15. ITEM NO.	16. STOCK/PART NO. (Indicate number of shipping containers - type of container - container number.)	17. QUANTITY SHIP/REC'D *	18. UNIT	19. UNIT PRICE	20. AMOUNT		
0002	AD Technical Memorandum, Task 5	1	each	NSP			
21. PROCUREMENT QUALITY ASSURANCE				22. RECEIVER'S USE			
A. ORIGIN <input type="checkbox"/> PQA <input type="checkbox"/> ACCEPTANCE of listed items has been made by me or under my supervision and they conform to contract, except as noted herein or on supporting documents.		B. DESTINATION <input type="checkbox"/> PQA <input type="checkbox"/> ACCEPTANCE of listed items has been made by me or under my supervision and they conform to contract, except as noted herein or on supporting documents.		Quantities shown in column 17 were received in apparent good condition except as noted.			
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